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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,979	12/05/2003	Masaki Katagiri	001458.00038	7224

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EXAMINER	
GAGLIARDI, ALBERT J	
ART UNIT	**PAPER NUMBER**
2878	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,979	KATAGIRI, MASAKI	
	Examiner	Art Unit	
	Albert J. Gagliardi	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-12,21-25 and 27-30* is/are pending in the application.

4a) Of the above claim(s) *10-12,21-25 and 27-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/511,913.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 7-9) in the reply filed on 20 September 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 10-12, 21-25, and 27-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse (see above) in the reply filed on 20 September 2004.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The examiner also notes that the specification makes numerous references to specific claims, but that many of those claims are no longer present in the application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeever *et al.* (US 5,962,857) in view of Warburton (US 6,169,287).

Regarding claim 7, *McKeever* discloses (Figs. 1, 3a-c) method of measuring the dose of radiation accumulated in a stimulable phosphor (28) as a radiation detecting medium having a fluorescence lifetime of no longer than 2 μs (i.e., microseconds at col. 4, lines 7-9), comprising the steps of illuminating the stimulable phosphor (28) with pulsed exciting light (10) having an irradiation time not longer than the lifetime of stimulated fluorescence from the stimulable phosphor (col. 4, lines 10-12), detecting the emitted fluorescence with a photodetector (24), and wherein the detected signals are integrated (col. 8, lines 56-58) in order to detect a luminescent signal attributed to an absorbed dose (col. 5, lines 60-63).

Although *McKeever* does not specifically identify that precise manner in which the pulse signal is acquired, those skilled in the art appreciate that a variety of well-known and functionally equivalent means for acquiring a signal pulses are known in the art. *Warburton*, for example discloses a method of acquiring radiation signal pulses by an integration technique including amplifying the detected signal with a charge-sensitive preamplifier, and feeding the amplified output signal into an appropriate pulse shaping amplifier to determine a pulse height (col. 3, lines 2-6).

Therefore absent some degree of criticality, it would have been an obvious design choice within the skill of a person of ordinary skill in the art to modify the method suggested by *McKeever* such the integrated pulse is acquired by amplifying the detected signal with a charge sensitive preamplifier, feeding the signal to a pulse shaping amplifier where it is subjected to both waveform shaping with a time constant longer than the lifetime of stimulated fluorescence from the stimulable phosphor (inherent aspect of integrating) to determine the pulse height in view of the well known and functionally equivalent means for acquiring such signals. Analog/digital conversion is well known and routine in the art in order to allow for easier and more accurate signal processing and storage.

Note: the examiner notes that while *McKeever* refers to the fluorescent lifetimes as relatively long, such lifetimes are considered relative to the pulse duration (which may be in nanoseconds – see col. 7, lines 39-40). As such lifetimes "of less than 2μs" are considered as consistent with, and an overlap of the range of lifetimes of "microseconds to milliseconds" (col. 4, lines 7-10) disclosed by *McKeever*, and therefore considered as an obvious, if not inherent aspect of the invention disclosed by *McKeever*.

Regarding claim 8, *McKeever* discloses that a gated photomultiplier is used as the photodetector and synchronously with the illumination of the stimulable phosphor with pulsed exciting light having an irradiation time not longer than the lifetime of stimulated fluorescence from the stimulable phosphor, the gate of the photomultiplier tube is controlled such that it remains off as long as the illumination continues but turns on after the illumination ends, and the emission of stimulated fluorescence from the excited stimulable phosphor is detected (col. 10, lines 16-20; Figs. 3c and 7).

Regarding claim 9, in an alternative arrangement *McKeever* discloses a pulse counting method of measuring the dose of radiation accumulated in a stimulable phosphor as a radiation detecting medium having a fluorescence lifetime of no longer than 2 μs, comprising the steps of illuminating the stimulable phosphor with pulsed exciting light (10) having an irradiation time not longer than twice the lifetime of stimulated fluorescence from the stimulable phosphor, detecting the emitted fluorescence with a photodetector (24), whereby the stimulated fluorescence signal is picked up on the basis of it being output in accordance with the lifetime of fluorescence upon illumination with the pulsed exciting light, and counting the number of stimulated fluorescence signals with a counter circuit (25). Regarding the specific steps of photon counting, a variety of functionally equivalent counting methods are well known and considered a matter of obvious design choice. As such, the steps of amplifying the detected signal with a signal amplifier, feeding the amplified output signal into a pulse height

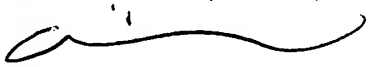
discriminator, picking up the signal for stimulated fluorescence as a pulse signal, performing coincident counting on the pulse signal and a read signal constructed using a signal indicating the time duration of illumination with the pulsed exciting light, would have been obvious steps within the skill of a person of ordinary skill in the art in order to effect the photon counting.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi
Primary Examiner
Art Unit 2878

AJG